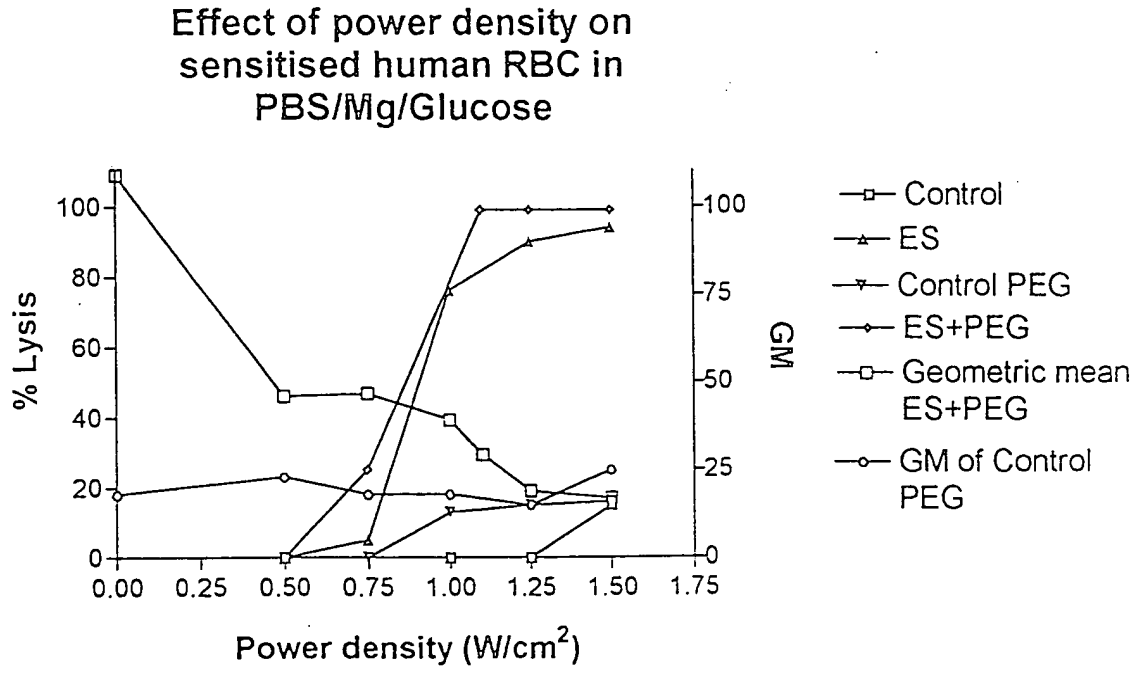

Effect of power density on sensitised human RBC in PBS/Mg/Glucose
% Lysis
GM
Power density (W/cm2)
0.00
0.25
0.50
0.75
1.00
1.25
1.50
1.75
0
20
40
60
80
100
25
50
75
Control
ES
Control PEG
ES+PEG
Geometric mean ES+PEG
GM of Control PEG

Fig.1

Fig 2A

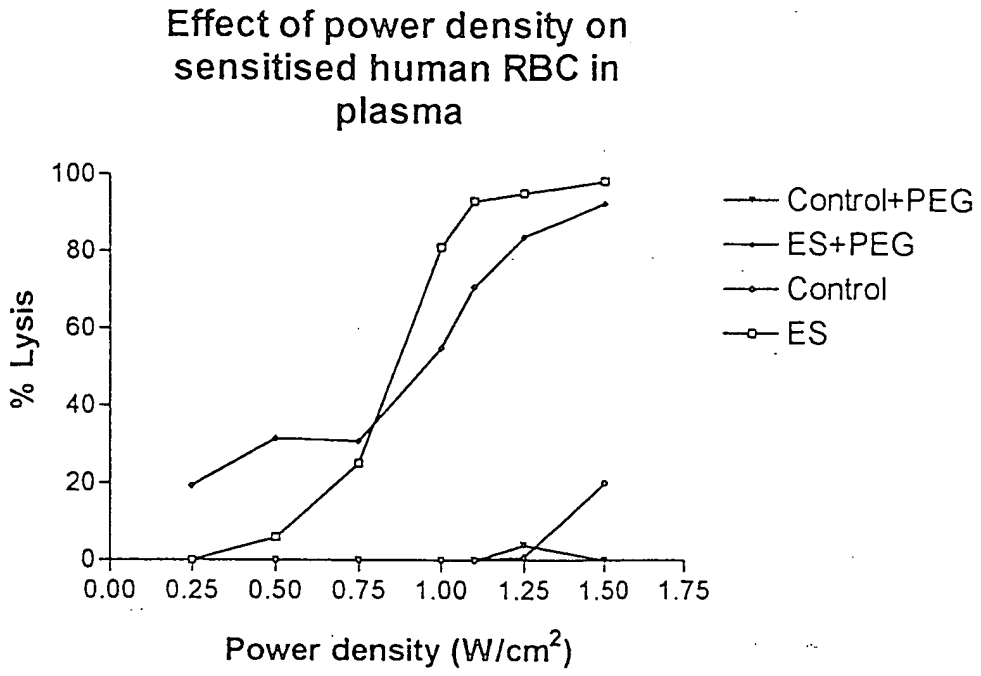
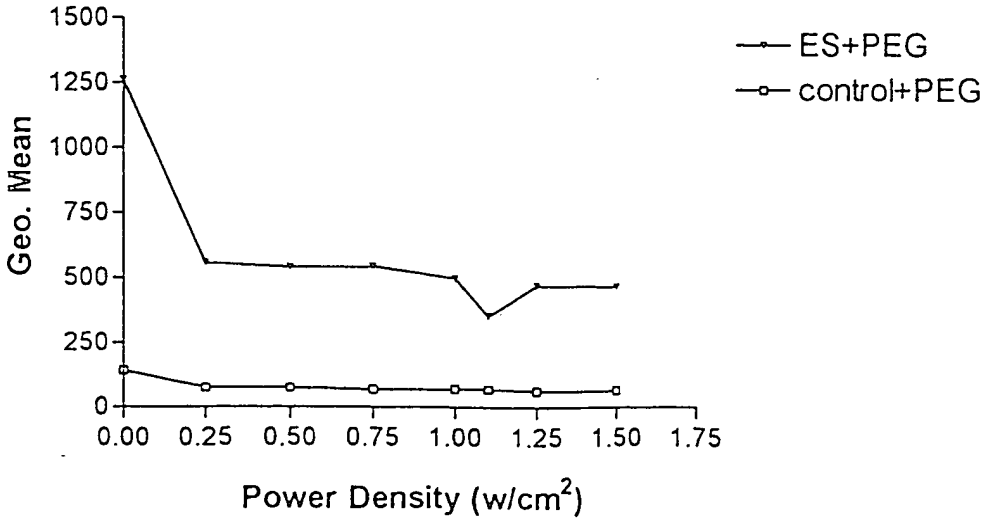

Effect of power density on sensitised human RBC in plasma
% Lysis
100
80
60
40
20
0
0.00
0.25
0.50
0.75
1.00
1.25
1.50
1.75
Power density (W/cm2)
Control+PEG
ES+PEG
Control
ES

Fig 2B


Geo. Mean
1500
1250
1000
750
500
250
0
0.00
0.25
0.50
0.75
1.00
1.25
1.50
1.75
Power Density (w/cm2)
ES+PEG
control+PEG

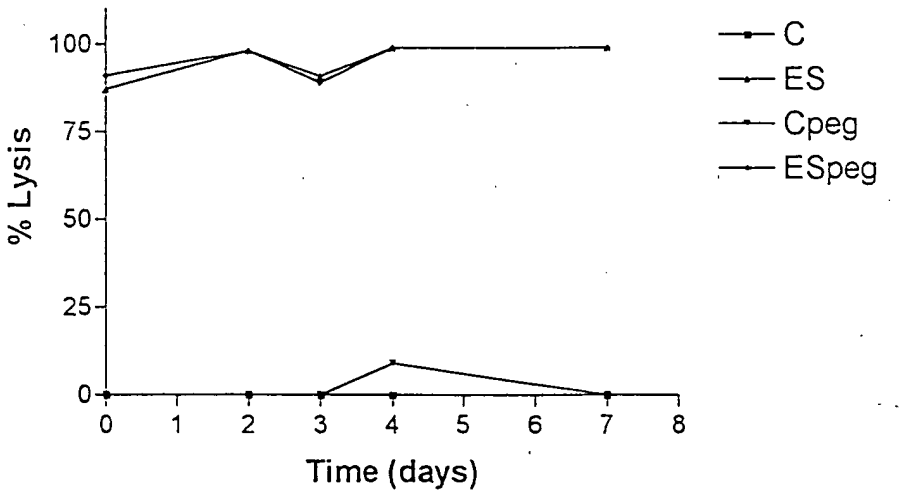


Fig. 3

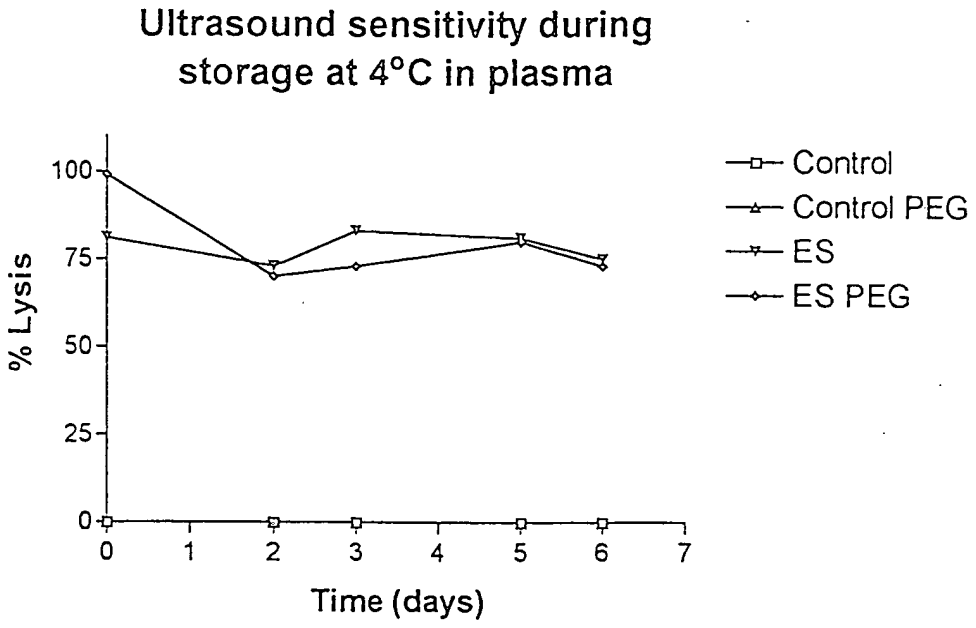

Ultrasound sensitivity during storage at 4°C in plasma
% Lysis
100
75
50
25
0
0
1
2
3
4
5
6
7
Time (days)
Control
Control PEG
ES
ES PEG

Fig. 4

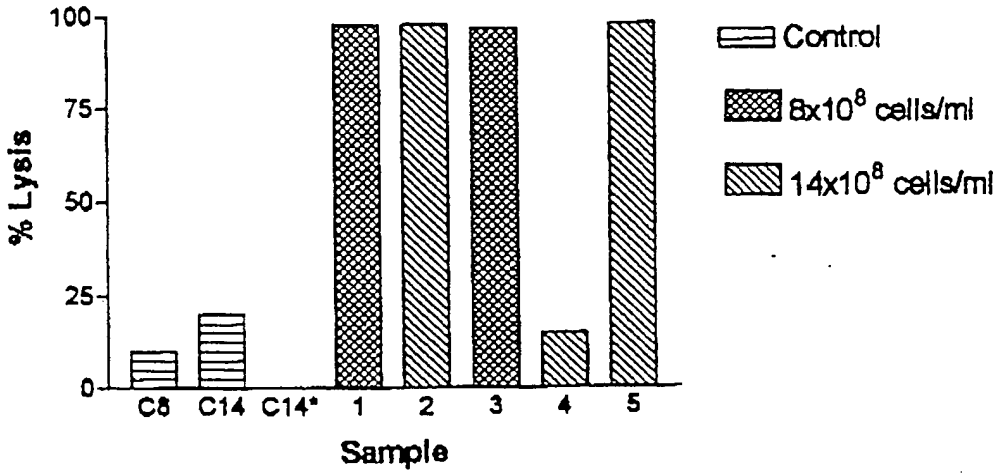

100
75
50
25
0
% Lysis
C8
C14
C14*
1
2
3
4
5
Sample
Control
8x10^8 cells/ml
14x10^8 cells/ml

Fig. 5

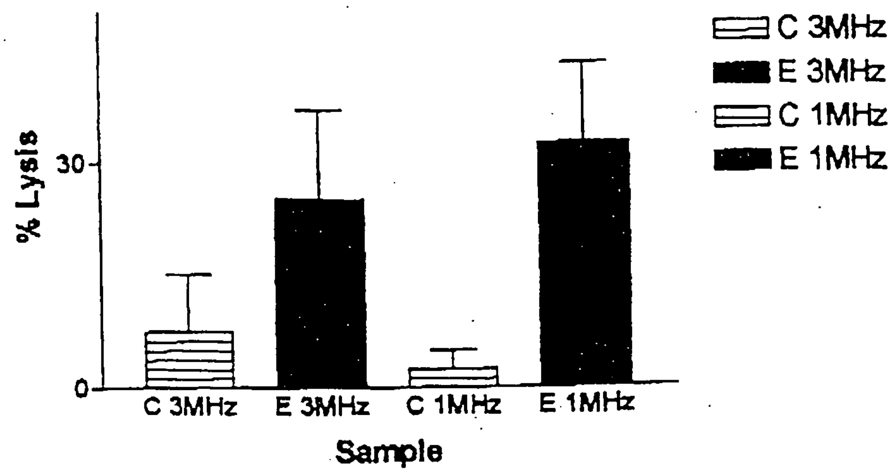

% Lysis
30
0
C 3MHz
E 3MHz
C 1MHz
E 1MHz
Sample
C 3MHz
E 3MHz
C 1MHz
E 1MHz

Fig. 6

Fig 7A

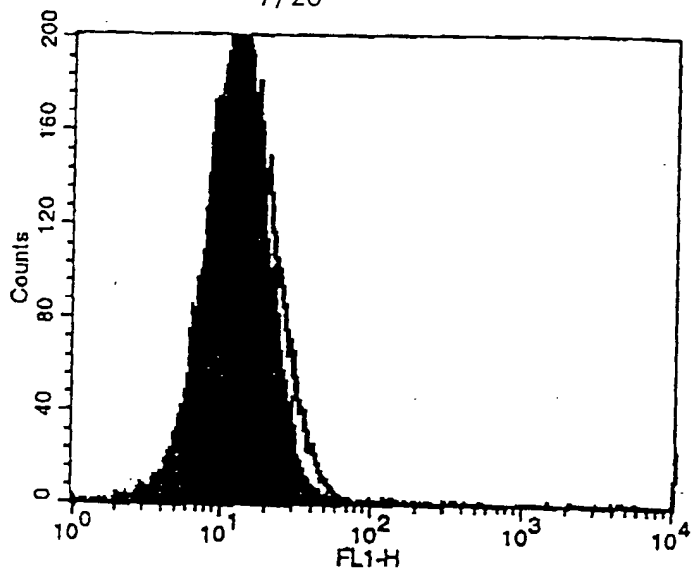


Fig 7B

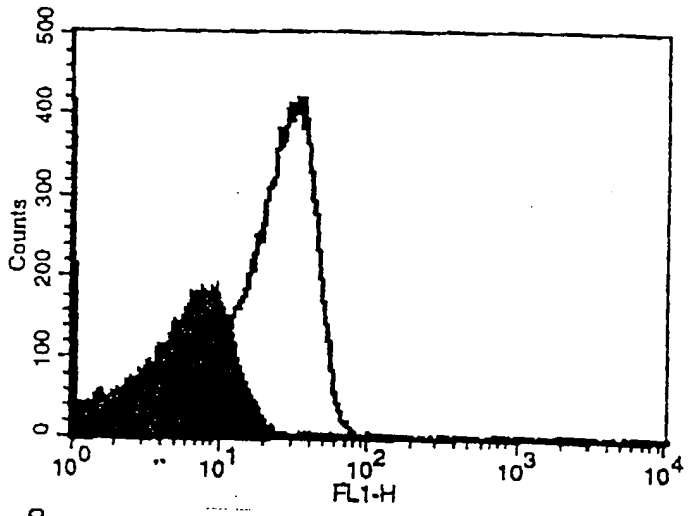
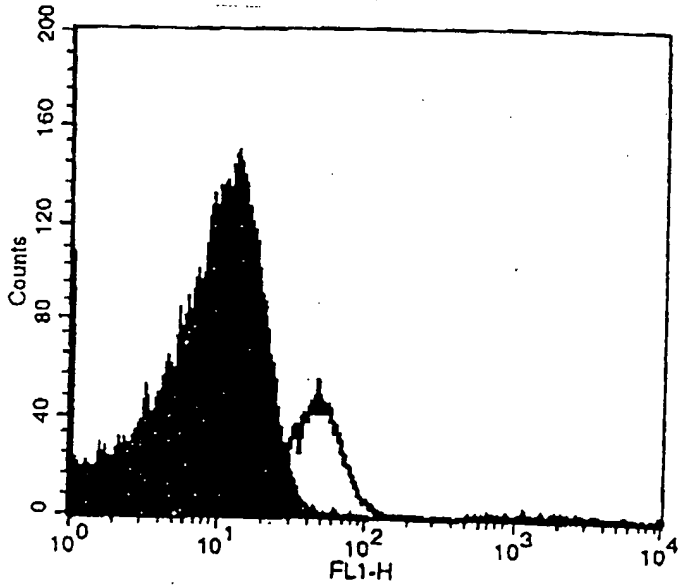


Fig 7C



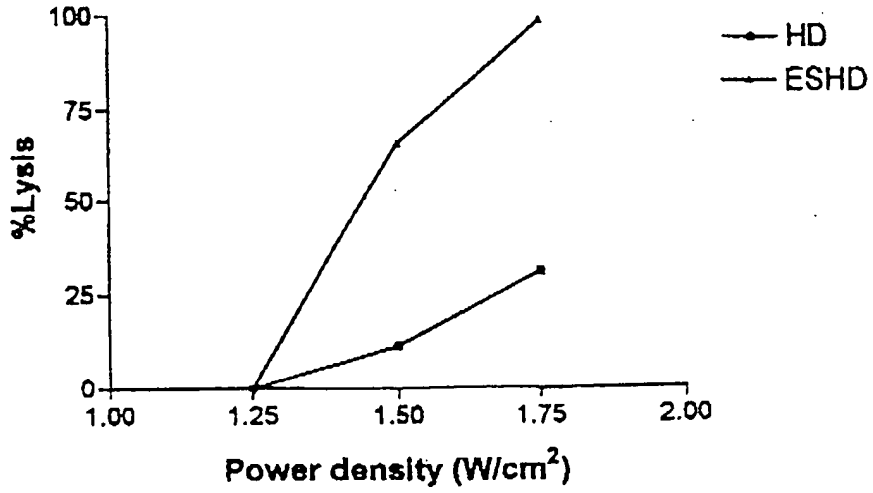

100
75
50
25
0
%Lysis
1.00
1.25
1.50
1.75
2.00
Power density (W/cm²)
HD
ESHD

Fig. 8

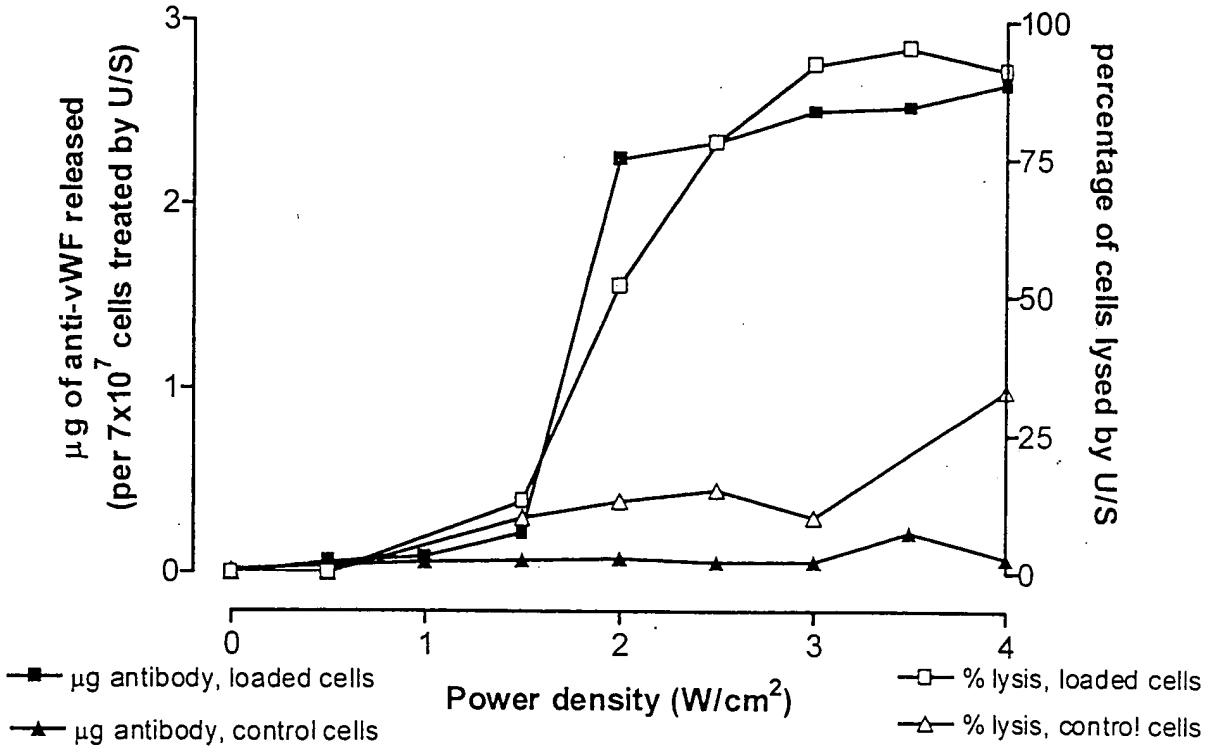

µg of anti-vWF released
(per 7x10^7 cells treated by U/S)
percentage of cells lysed by U/S
Power density (W/cm^2)
µg antibody, loaded cells
µg antibody, control cells
% lysis, loaded cells
% lysis, control cells

Fig. 9

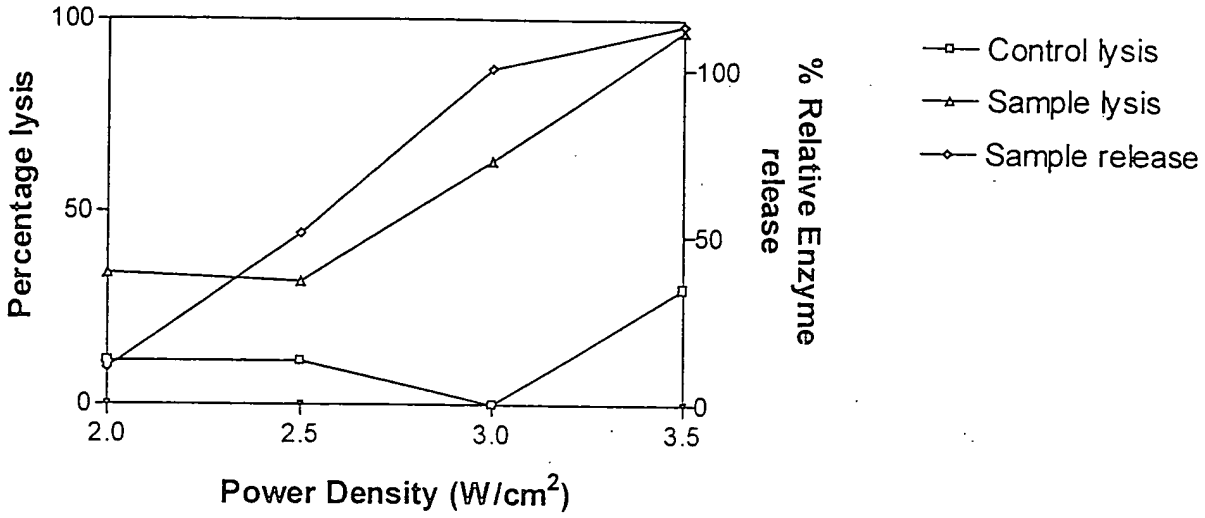

100
50
0
Percentage lysis
2.0
2.5
3.0
3.5
Power Density (W/cm²)
100
50
0
% Relative Enzyme release
Control lysis
Sample lysis
Sample release

Fig.10

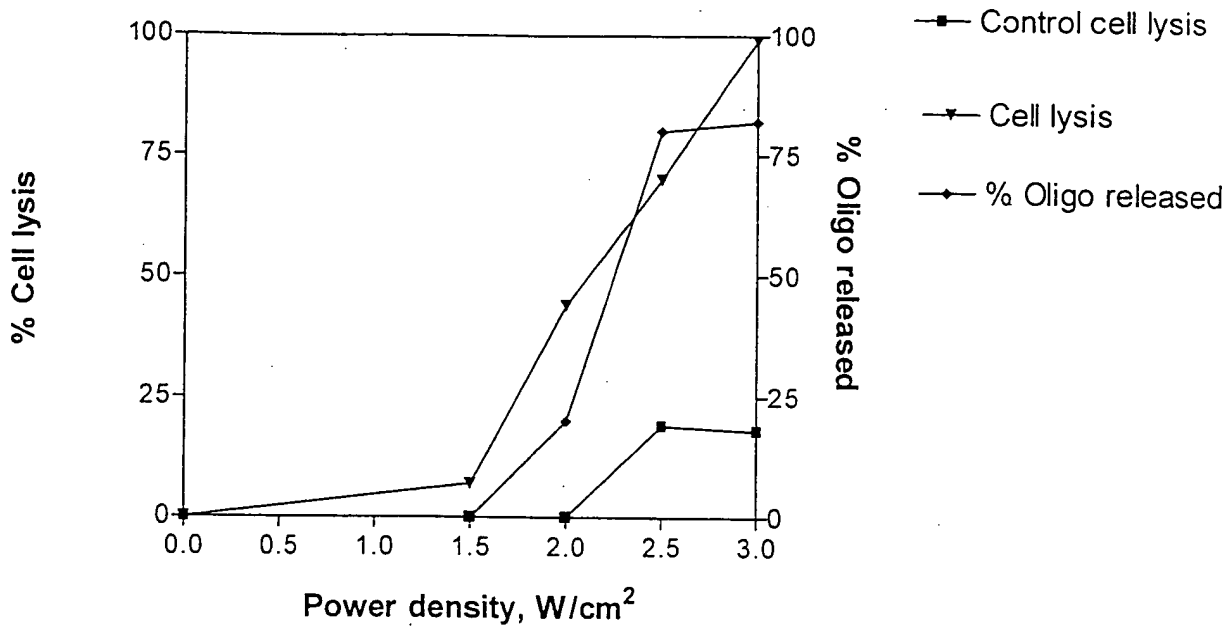

100
75
50
25
0
0.0
0.5
1.0
1.5
2.0
2.5
3.0
% Cell lysis
% Oligo released
Power density, W/cm2
Control cell lysis
Cell lysis
% Oligo released

Fig.11

+U/S

-U/S

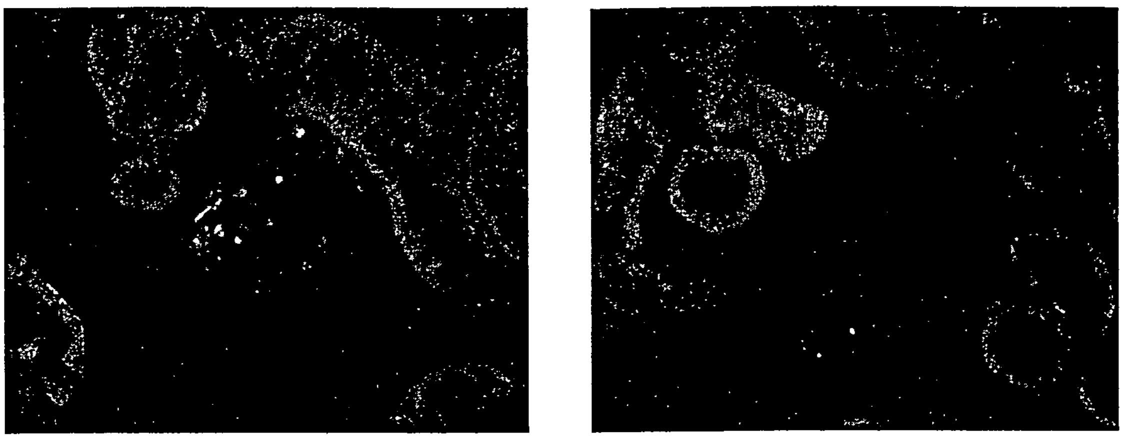


Fig.12

Fig. 13A RbRBC + Electrosensitisation

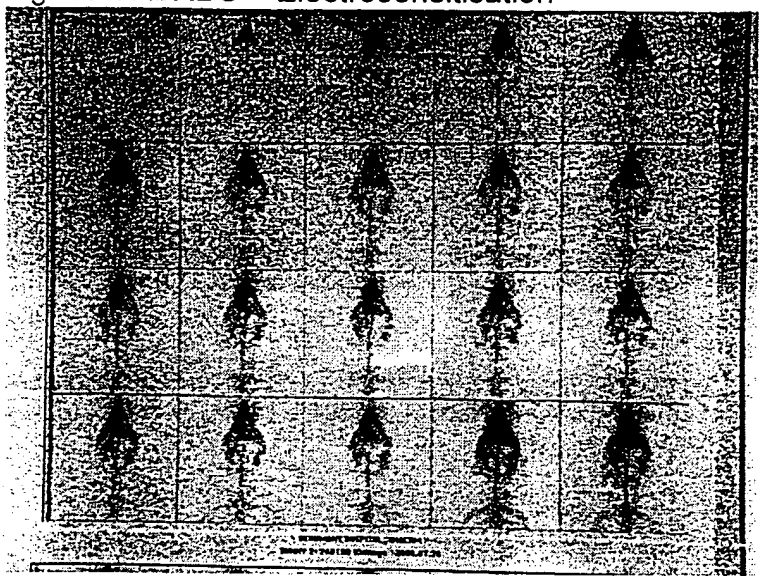


Fig.13B RbRBC unmodified

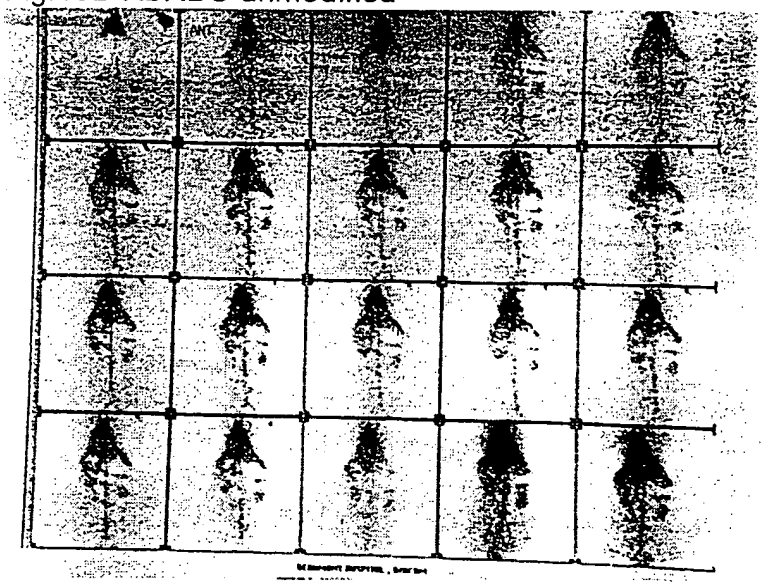


Fig.13C RbRBC plus 2.5% glutaraldehyde

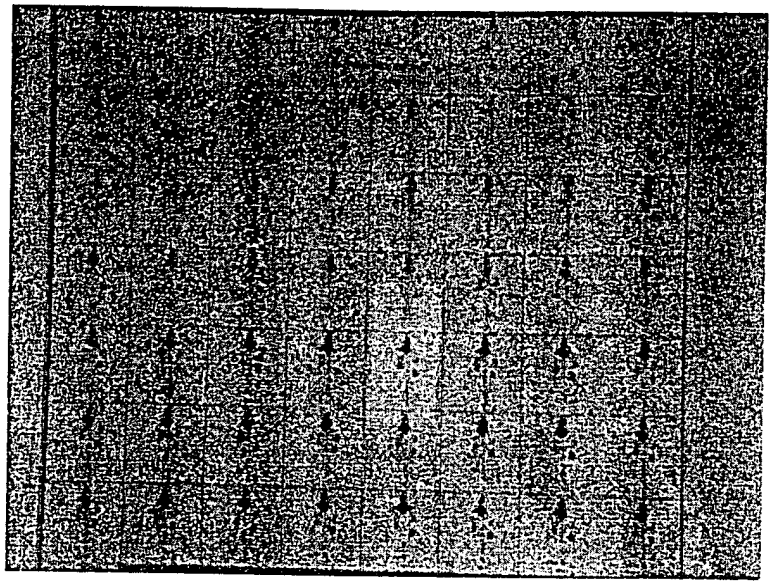


Fig.13D

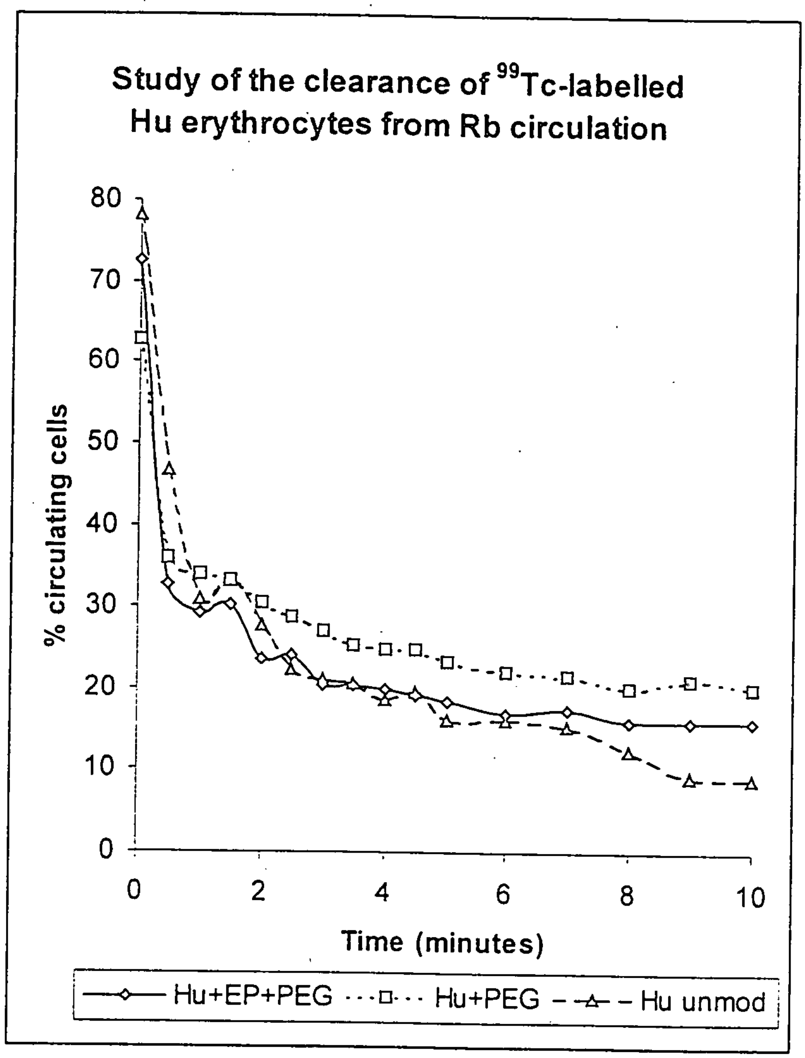

Study of the clearance of 99Tc-labelled
Hu erythrocytes from Rb circulation
% circulating cells
80
70
60
50
40
30
20
10
0
0
2
4
6
8
10
Time (minutes)
Hu+EP+PEG
Hu+PEG
Hu unmod

Fig. 14

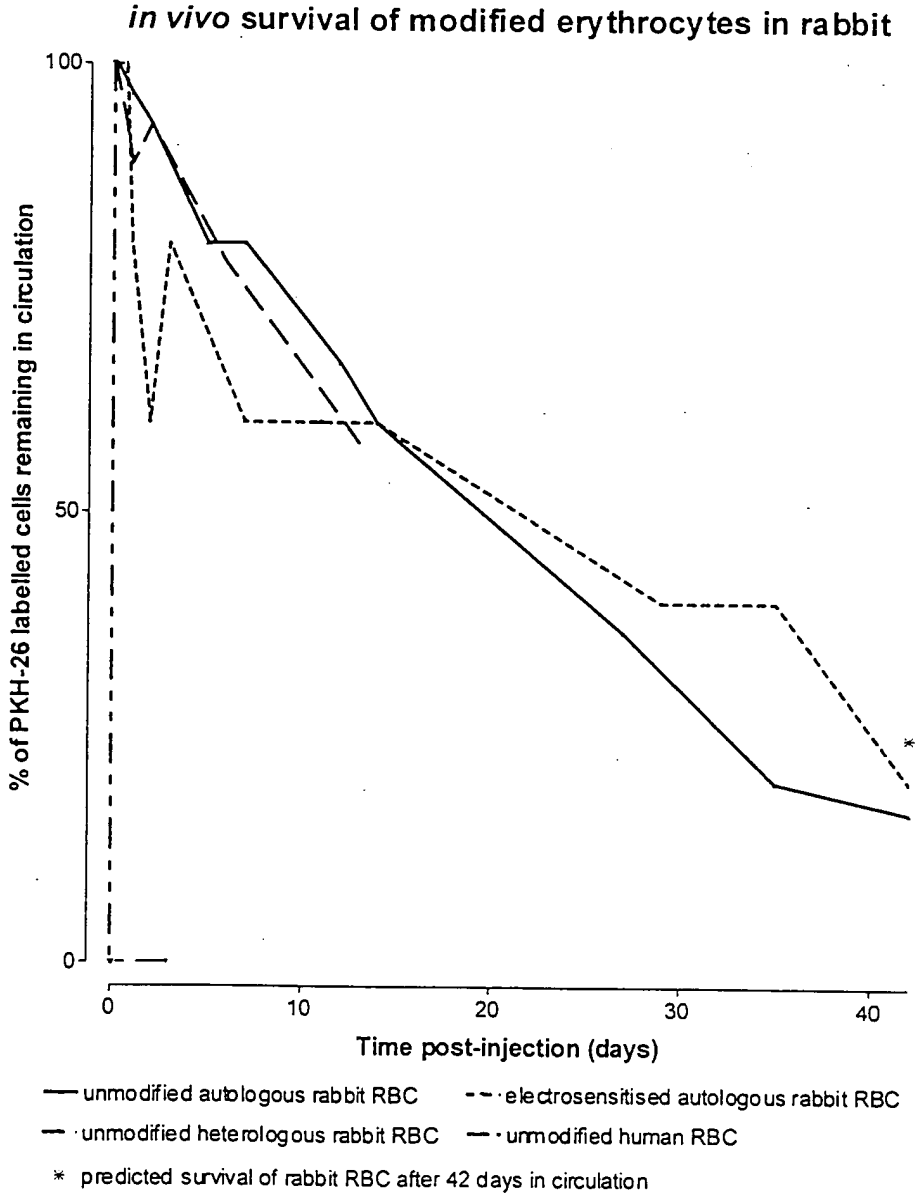

in vivo survival of modified erythrocytes in rabbit
100
50
0
% of PKH-26 labelled cells remaining in circulation
0
10
20
30
40
Time post-injection (days)
unmodified autologous rabbit RBC
electrosensitised autologous rabbit RBC
unmodified heterologous rabbit RBC
unmodified human RBC
* predicted survival of rabbit RBC after 42 days in circulation

Fig.15

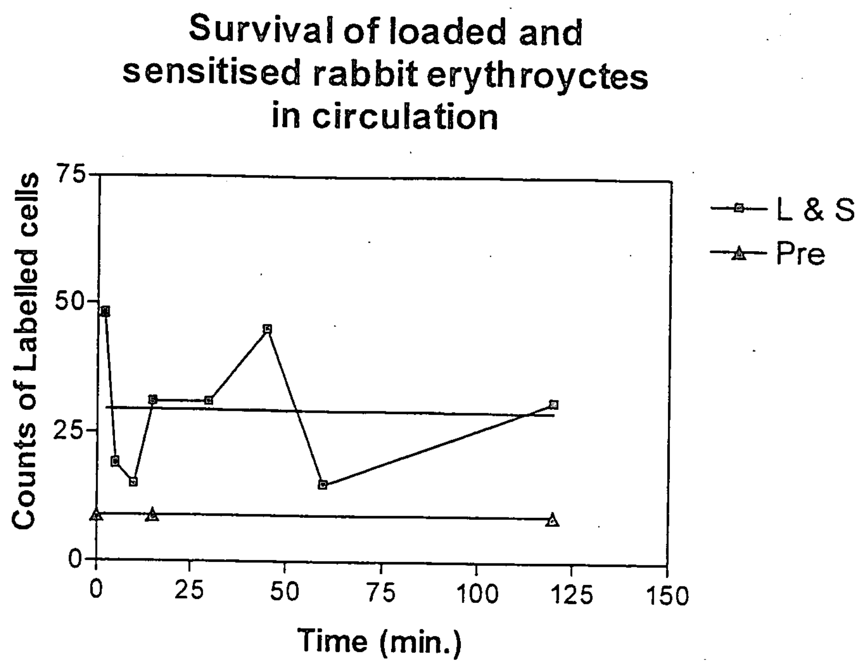


Fig.16

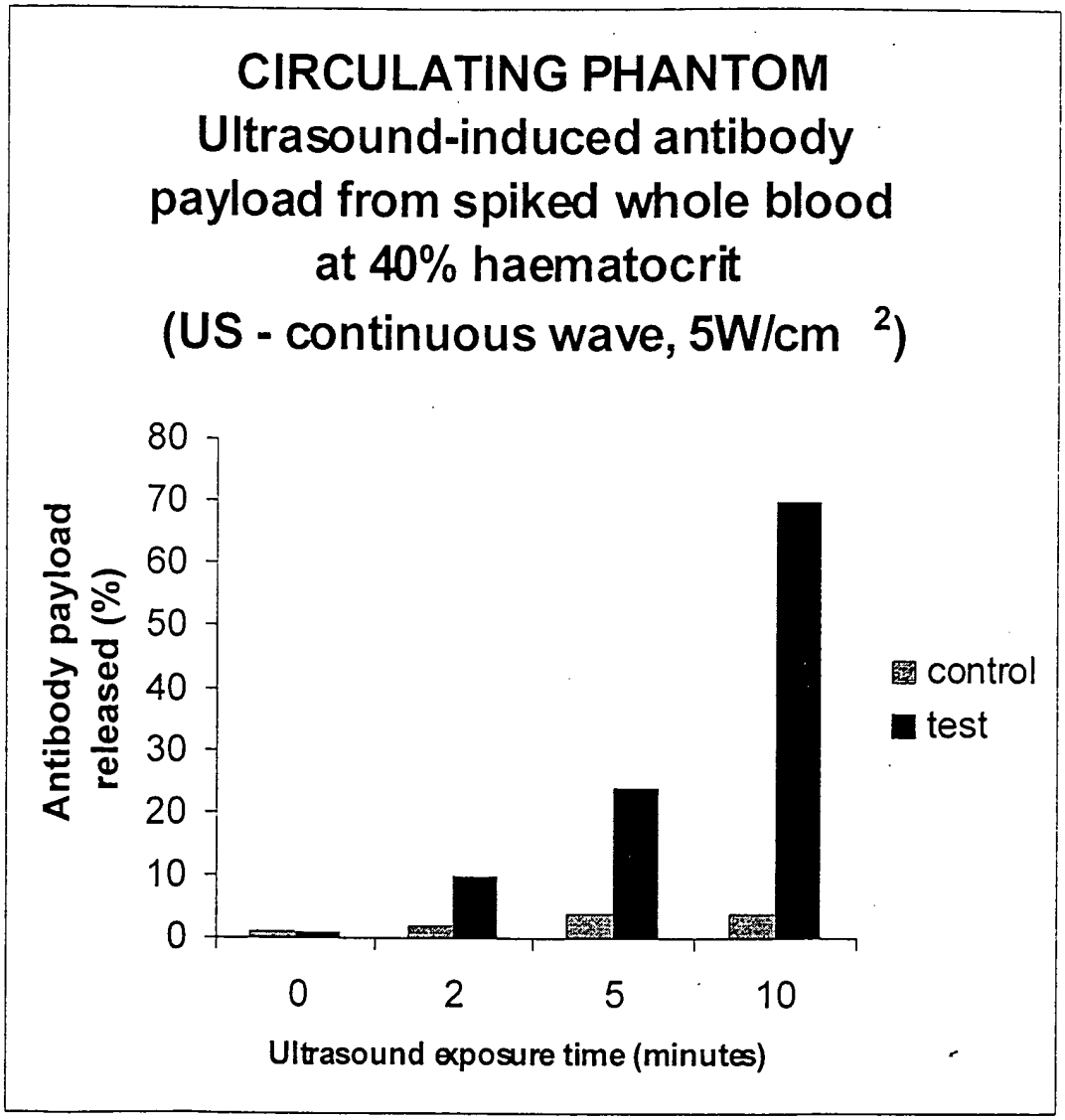

CIRCULATING PHANTOM
Ultrasound-induced antibody payload from spiked whole blood at 40% haematocrit
(US - continuous wave, 5W/cm 2)
Antibody payload released (%)
80
70
60
50
40
30
20
10
0
0
2
5
10
Ultrasound exposure time (minutes)
control
test

Fig.17

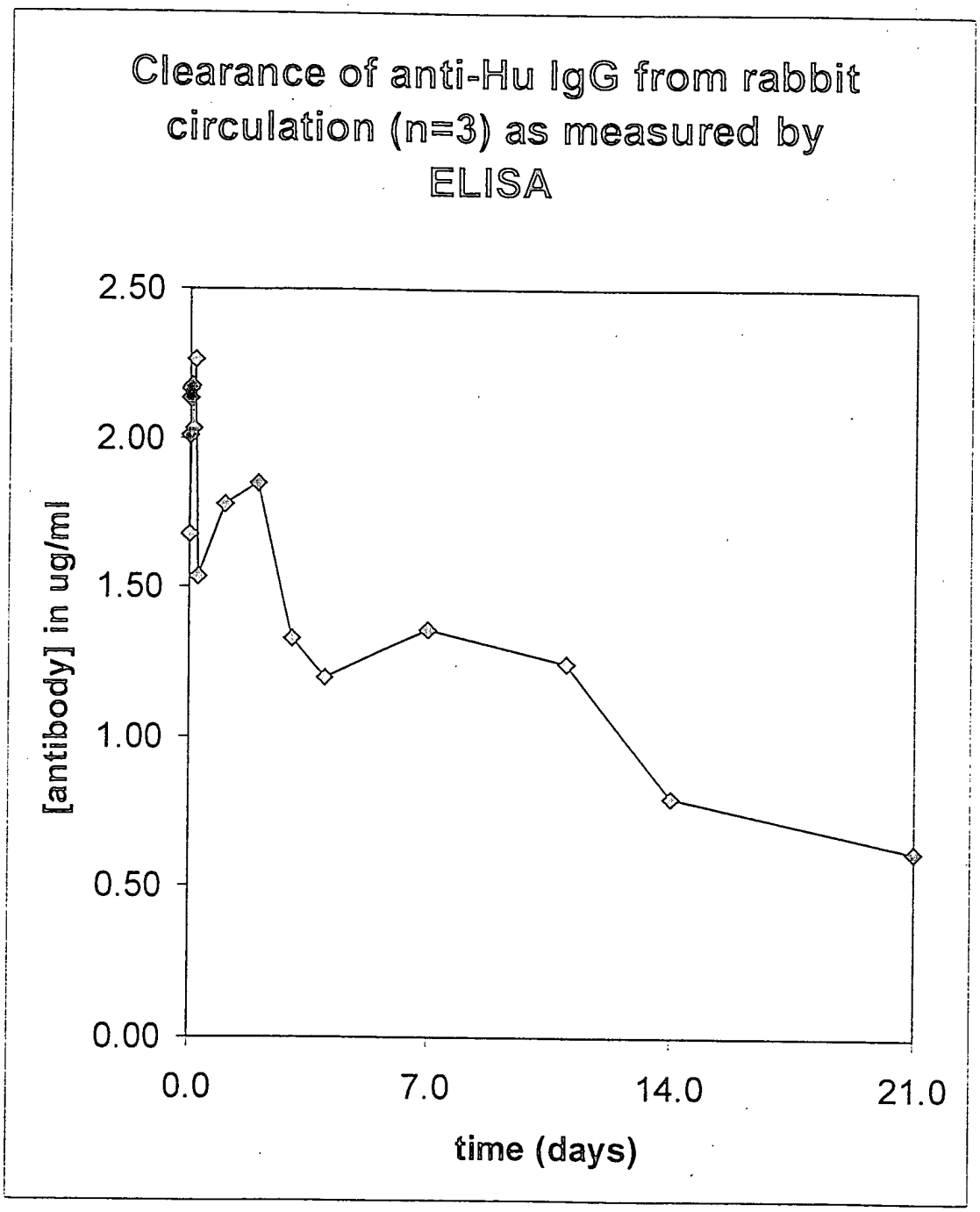
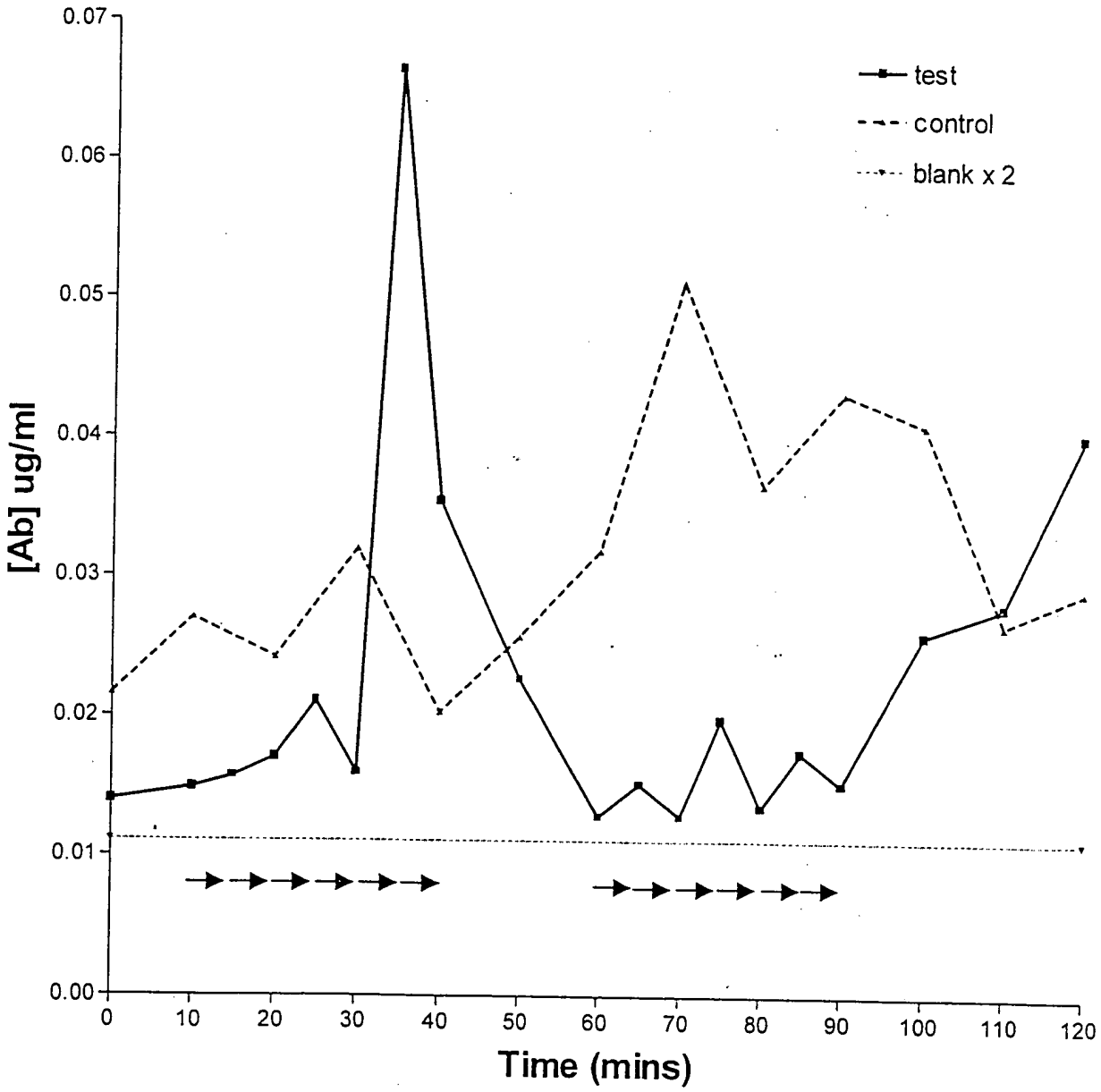

Clearance of anti-Hu IgG from rabbit circulation (n=3) as measured by ELISA
2.50
2.00
1.50
1.00
0.50
0.00
[antibody] in ug/ml
0.0
7.0
14.0
21.0
time (days)

Fig. 18

Ultrasound-mediated release of antibody payload *in vivo*



→ Ultrasound treatment periods (1MHz probe, 4W/cm^2, 4')

Fig. 19